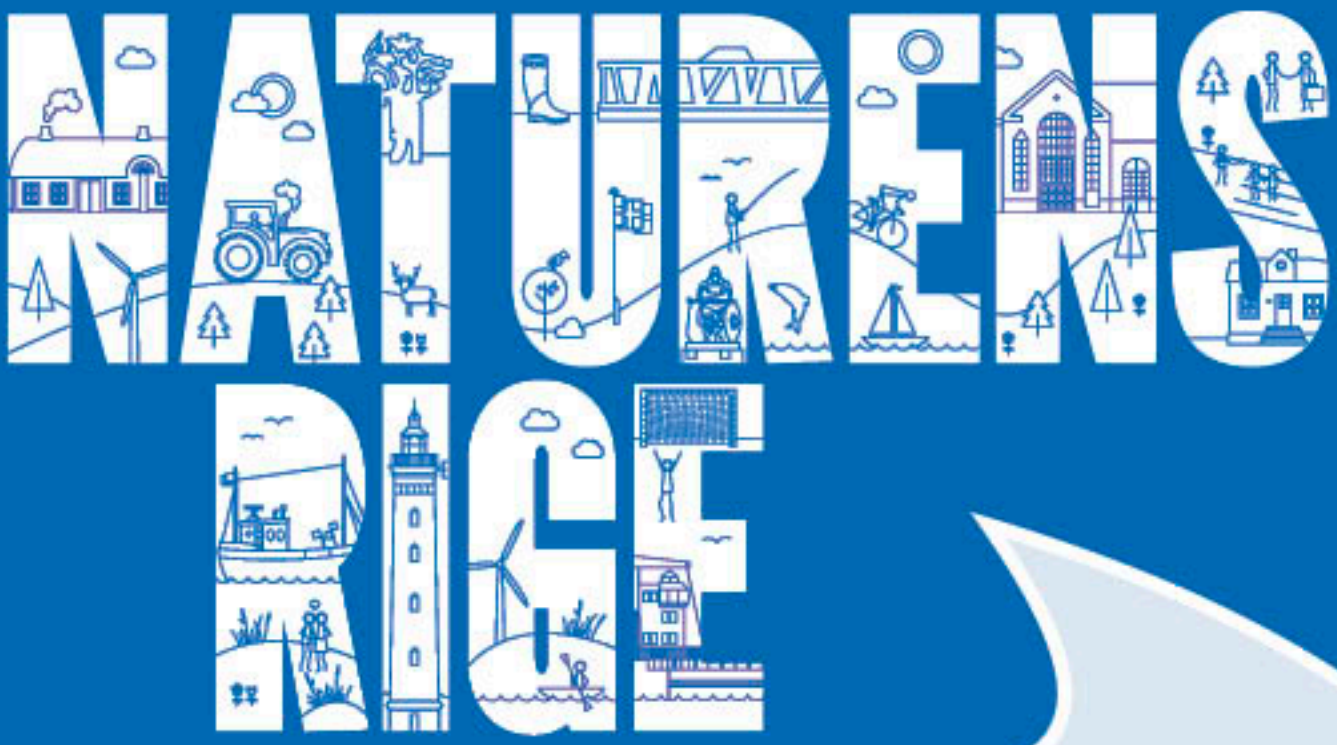


Strategic energy plan for Ringkøbing-Skjern Municipality

Energy 2020 Strategy
2015-2018

Energi 2020
Ringkøbing-Skjern – 100 % vedvarende

www.rksk.dk

Ringkøbing-Skjern Kommune

Mayor Iver Enevoldsen
Ringkøbing-Skjern Municipality

Chairman of the Energy Council
Peder Sørensen

In the geographically largest municipality in Denmark we are rich in nature. Here the wind really blows; it is here people and animals thrive, whilst plants grow, the sun shines and the North Sea's waves break on the coast.

Ringkøbing-Skjern is rich in nature, and in renewable energy sources. Hence, the city council has adopted the vision, 'Naturens Rige' or 'Nature's Kingdom', which states that nature is the cradle for creating "the good life" and growth and through that, employment opportunities and jobs in the municipality.

An ingredient in creating 'Nature's Kingdom 'is 'Energy 2020' – our vision of a municipality, which is 100 percent self-sufficient with renewable energy by year 2020. It is an ambition, which includes anything from businesses' electrical consumption, to heating of the municipal buildings and citizens' car usage etc.

This requires that we understand how to best utilise our natural resources. This has to be done intelligently, no matter if the renewable energy is from wind, slurry, biomass or the sun.

We are already well on our way. Actually, we are already more than half way of reaching this target. In 2014 we 56 percent of our total consumption was from renewable energy sources.

Now we have to reach the final target, and this strategy presents the way forward towards 2018. One of the critical points is ensuring local empowerment. To reach the 100 percent target it is necessary that everyone contributes to the vision: municipality, local businesses and citizens.

Enjoy the reading.

Iver Enevoldsen
Mayor

(Date and signature)

Peder Sørensen

Chairman of the Energy Council

(Date and signature)

Members of the Energy Council: Peder Sørensen, Jakob Agerbo, Bent Dyrvig, Hans Jørn Mikkelsen, Kjeld Pedersen, Karl Højhus Jeppesen, Jesper Skovhus Andersen, Henning Bo Madsen, Per Hessellund Lauritsen, Jacob Møller, Søren Lydig Kristensen, Ove Hjortholm Larsen, Ann Elisabeth Bjerrehøj og Henning Donslund.

Table of contents:

*RE = Renewable Energy

The Vision

Energy2020 is Ringkøbing-Skjern Municipality's vision to become self-sufficient with renewable energy by 2020. This means that we produce as much renewable energy as the citizens and businesses in the municipality consume. This applies to housing, workplaces and transport.

The way forward in reaching this objective is through dialogue and cooperation. Businesses, citizens, associations and institutions need to undertake large and small projects concerning renewable energy and energy savings.

This must strengthen local businesses, who can develop and test new technologies and in this way create green growth in Ringkøbing-Skjern Municipality.

Strategic energy plan for Ringkøbing-Skjern Municipality

In Denmark, the long-term goal is that the entire energy supply is 100% based on renewable energy in 2050. The Energy Agreement from March 2012 provides the national framework for this undertaking toward 2020.

Since the beginning of 2008, a unified City Council in Ringkøbing-Skjern has endorsed Energy2020, which in turn will significantly contribute to the overall national objective.

The preceding Energy2020 Strategy 2011-2014 has been replaced by the current strategic energy plan, Energy 2020 Strategy 2015-2018. Herein the City Council has set out the political objectives and selected focus areas that need priority in order to reach the objective of 100% renewable energy by 2020.

The initiatives set out here do not only include activities that the municipality can initiate itself, but also initiatives that must be kick-started in close cooperation with citizens, businesses and with key stakeholders in the energy industry.

The Energy2020 Strategy is an action-oriented embodiment of the City Council's Energy2020 Policy.

The Energy2020 Strategy has been formulated based on the Energy Council's recommendations, the City Council's theme day, theme notes and in recommendations from three local stakeholder workshops conducted in January and February 2015, where approximately 125 local citizens, experts and stakeholders actively contributed to relevant thematic areas in the municipality's strategic energy plan.

The Energy Council's chairman, Peder Sørensen, stresses the importance of involving local citizens and businesses in all future actions in moving toward the Energy2020 objectives.

Energy2020 Policy

The Energy2020 Policy covers the following four main themes:

1. Renewable energy sources
2. Energy and heat supply
3. Energy consumption
4. Business growth and value for citizens and businesses

Objective 1:
In 2020 we utilise local renewable energy sources in Ringkøbing-Skjern Municipality.

We will produce local renewable energy by utilising wind power, solar cells, solar heating and biomass etc.

We will enter into strategic cooperation with relevant parties in order to utilise renewable energy.

Objective 2:
In 2020 we have an efficient energy and heat supply based on renewable energy in Ringkøbing-Skjern Municipality.

Energy supply focuses on electricity and gas supply, whilst heat refers to district heating and individual heating.

We will enter into strategic cooperation with relevant parties in order to achieve an efficient energy and heat supply based on renewable energy.

Objective 3:
In 2020 we have reduced and optimised the efficiency of the energy consumption in Ringkøbing-Skjern Municipality.

We have a particular focus on energy consumption in:

- Residential and Holiday Housing
- Businesses
- Transport

We will enter into strategic cooperation with relevant parties in order to make energy consumption more efficient.

Objective 4:
Jointly, we create business growth and value for citizens and businesses.

We will create green business growth and employment within the field of renewable energy.

We will promote renewable energy solutions for the benefit of citizens and businesses.

Energy2020 will put Ringkøbing-Skjern Municipality on the map, nationally and internationally.

We will create a local stakeholder network and enter into strategic cooperation with relevant parties.

We will prepare a Strategic Energy Plan and follow-up on the Energy Accounts.

Energy2020 is embedded in the City Council and is organised via the Economy and Business Committee, in the Energy Council and the Energy Secretariat.

The road towards 100% renewable energy in 2020

The degree of self-sufficiency with renewable energy is approximately 56.2% in 2015. The following nine focus areas will increase renewable energy by approximately 44.2%, bringing Energy2020 to its full objective of 100% in 2020:

No	Topic	Impact on share of renewable energy in percentage points
1	Reduction in heat consumption in housing	0.2 %
2	Industrial consumption is transformed to partially renewable energy	1.0 %
3	Reduction in energy consumption for road transport	0.8 %
4	More renewable energy in district heating	4.7 %
5	Individual oil boilers shifting to renewable energy	1.9 %
6	Wind power	22.0 %
7	Solar power plants (photovoltaics)	1.3 %
8	More production of local biomass	0 %
9	Biogas plants	12.3 %
	Total of all initiatives	**44.2 %**
	Renewable energy in 2015, RE %	**56.2 %**
	Total RE % from realisation of all initiatives	**100.4 %**

***Tabel 1**: Estimated impact by completing all nine initiatives.*

Failure in fully realising one topic (focus area) will result in a higher ambition in another.

Nature is the cradle for creating "the good life" and growth in Ringkøbing-Skjern Municipality.

The Sun and wind are the sources of renewable energy that create growth and employment in Ringkøbing-Skjern Municipality. Nature is a prerequisite for the strong food sector in Ringkøbing-Skjern Municipality, which together with other biomass, can be transformed into energy and work places.

An area that generates its own energy is attractive to live and work in. Clean nature is a part of the good life in Ringkøbing-Skjern Municipality. Therefore, Ringkøbing-Skjern Municipality is working on producing as much energy as we consume in the area by 2020. This endeavour we call 'Energy2020'.

The Energy Accounts

Status: Consumption and RE-share

Figure 1 demonstrates the progress in the share of renewable energy in Ringkøbing-Skjern Municipality in the period 2007-2013. This development is primarily grounded on wind power expansion. If the electricity production from wind power is added for calendar year 2014, the share of renewable energy increases to approximately 56%. RE = Renewable Energy.

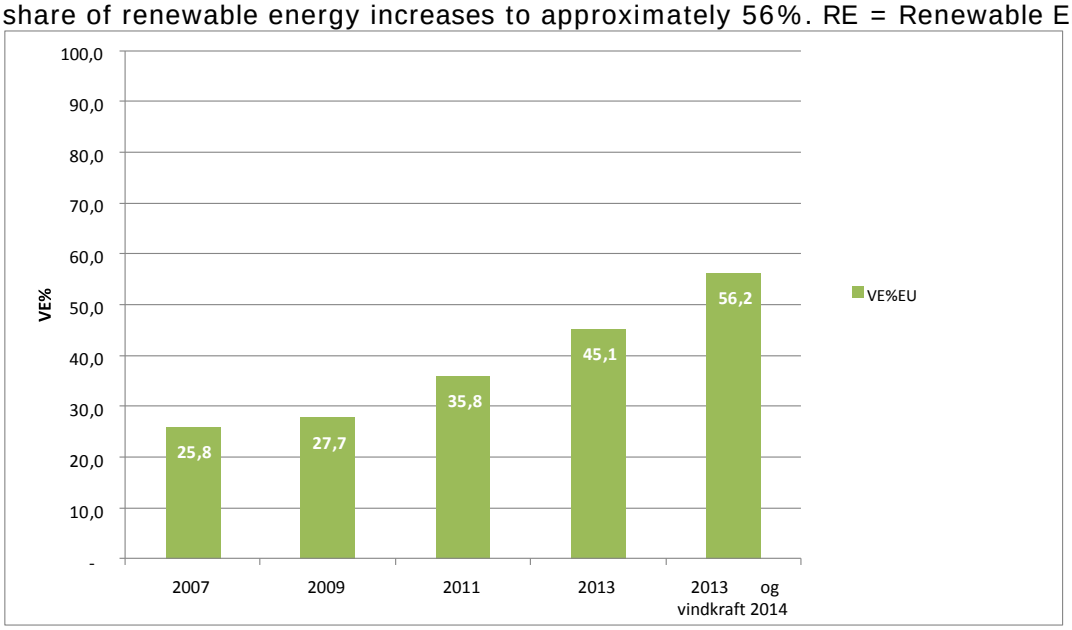


***Figure 1**: Share of renewable energy according to the Energy Accounts.*

Figure 2 presents the total fuel consumption spread in different fuel sources. The figure demonstrates that fuel consumption has undergone a slight increase in the period 2007-2013. This is primarily due to an increase in industrial fuel consumption.

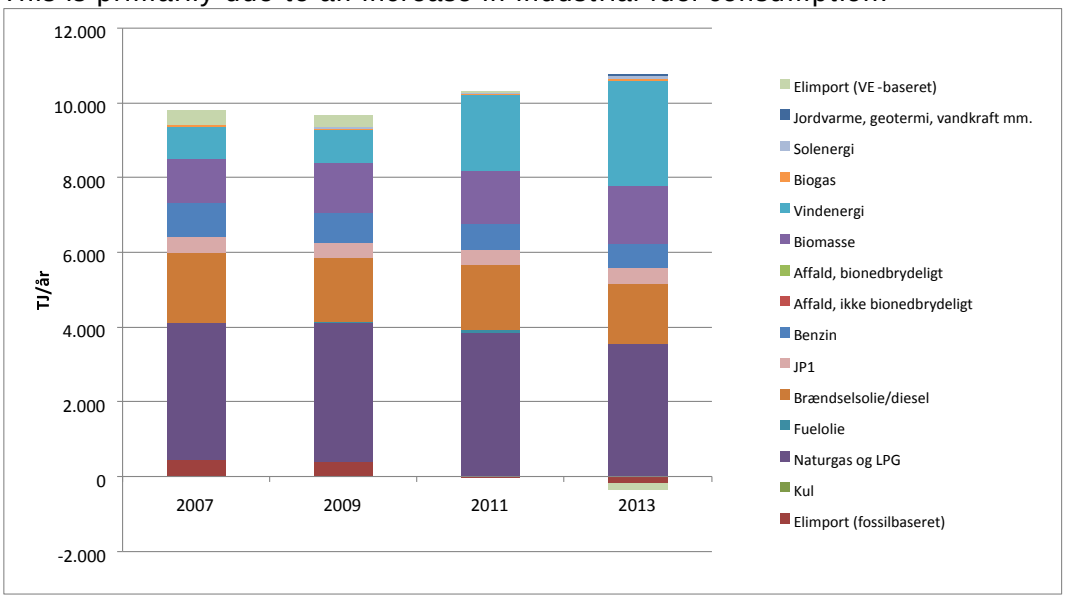


***Figure 2**: Fuel consumption of different fuel types in accordance with the Energy Accounts 2013.*

Organisation and Economy

The Energy Council – the heart of Energy2020

The efforts in transforming Ringkøbing-Skjern Municipality to 100% renewable energy is embedded in the Energy Council. The Energy Council is comprised of business stakeholders and organisational staff, representatives from Central Denmark Region, as well as politicians and civil servants from the municipality. The Energy Council advises the Economy and Business Committee and helps to inspire the surrounding area through awareness raising of renewable energy. The individual members act as ambassadors for Energy2020.

The municipality itself cannot transform the energy supply to renewable energy. This necessitates cooperation with the Energy Council and dialogue with businesses, suppliers and advocacy stakeholders. For this reason, the strategy also focuses on establishing partnerships that can advance the individual focus areas within the Energy2020 Strategy.
The Energy Council aspires that citizens and businesses actively adopt Energy2020 and the Council put a strong emphasis on local ownership of the many energy projects, in regards to both development, investment and output.

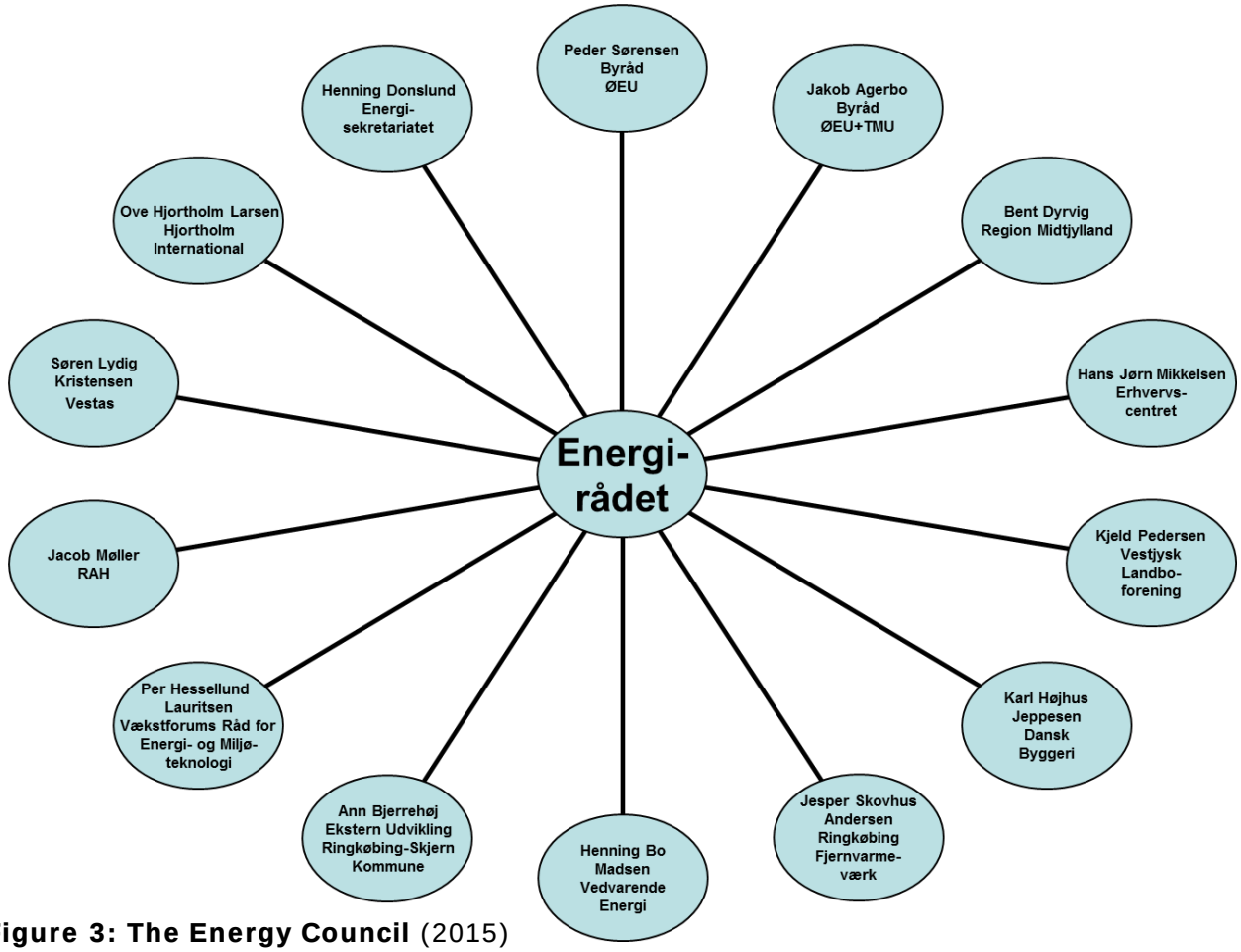


Figure 3: The Energy Council (2015)
Chairman: Peder Sørensen,
Deputy Chariman: Jakob Agerbo
Coordinator: Henning Donslund

The Energy Secretariat

The Municipality has established an Energy Secretariat, which facilitates and coordinates the work. The Energy Secretariat consists of staff who can bring competencies from other parts of the municipal organisation into play.
The Energy Secretariat is responsible for information and marketing activities. They prepare the strategic energy plan and action plans for Energy2020, are responsible for maintaining the Energy Accounts, just as they sustain and drive the dynamic action plan. Furthermore, the Energy Secretariat serve the Energy Council and assists all relevant parties and those interested, with advice, contacts and inspiration.
Externally, the Energy Secretariat facilitates new projects and partnerships.
Internally, Energy2020 is mainstreamed within all municipal organisations. From an organisational perspective, the Energy Secretariat is placed under the department for External Development in Knowledge and Strategy.

The Working Groups

The Energy Council establishes working group and appoints a coordinator for each focus area, where relevant.
The working group's objective is to advance Energy2020 with special focus on the targets for the group's focus area. (See action plan).
The Energy Council has appointed both Council members as well as external group coordinators. In order to be able to facilitate and coordinate, the Energy Secretariat participates in all the working groups. In groups where no group coordinator has been appointed, the Energy Secretariat acts as group coordinator.
The individual group coordinators and working groups have a big influence on detailed planning, where 'dialogue', 'dynamic' and 'flexibility' are key terms.
The working groups consist of local energy stakeholders and Energy Council members who on a voluntary basis contribute with their time and resources. There is a follow-up and evaluation of the groups' work via presentations once or twice a year in the Energy Council.
The Energy Secretariat coordinates activities between the various groups and actions detailed in this strategic energy plan.

Economy and local reward

Energy2020 and the green transition within the Ringkøbing-Skjern Municipality shall contribute to energy savings, and produce and use clean renewable energy to the benefit of the immediate local environment and global climate.
Energy2020 also makes common sense economically. An area that imports energy and thereby sends big sums of money out of the area is worse off than an area like ours, which can produce its own renewable energy. The savings for the local economy in turn benefits both citizens and businesses.
The Energy Council wants to focus on securing local ownership when investing in renewable energy, entailing a surplus renewable energy benefits the citizens in the municipality. A recent report by PlanEnergi, specifically demonstrates that the full realisation of Ringkøbing-Skjern Municipality's Energy2020 Strategy, will provide an annual savings to the municipality's economy, of approximately DKK 220 Million per year.
The same report also demonstrates economic gains in the long term, i.e. that an economic savings of DKK 400-600 Million per year is possible by transforming Ringkøbing-Skjern into fossil fuel free municipality in 2035.
In the period 2016-2019, an additional annual DKK 1 Million is allocated from the municipal growth pool.

Initiative overview

Focus areas 1-9, actions with direct impact on the Energy Accounts

No	Focus area topic	Impact	Target for effort
1	Reduction in heat consumption in housing	0.2	10% reduction in heat consumption in housing: 288 TJ/year
2	Renewable energy in businesses	1.0	20% of the industry's consumption switched to renewable energy
3	Less energy consumption for road transport	0.8	10% reduction in energy consumption for road transport. Reduced energy consumption: 177 TJ/year
4	More renewable energy in district heating	4.8	Increase from 40% to 60% renewable energy in the district heating
5	Change oil boiler to renewable energy	1.9	2/3 of individual oil boilers switch to renewable energy
6	New wind turbines	22.0	Wind power is increased to an annual electricity production of approximately 6,000 TJ/year, which equates to approximately 2.4 times the existing electricity consumption.
7	New solar cell plants	1.3	Three planned field plants with solar cells are implemented, so electricity from solar cells cover approx. 5% of the municipality's total electricity consumption.
8	More production of local biomass	0	More production of local biomass is desired. It is estimated that could contribute very little before 2020, but more in the years to follow.
9	Biogas plants	12.3	Annual biogas production of approximately 1,230 TJ

Focus areas 1-9 are expected to contribute by the presented impacts to the Energy Accounts. Failure in fully realising one topic (focus area) will result in a higher ambition in another.

Focus area 10-13, supplementing actions without direct impact on the Energy Accounts

No	Focus area topic		Target for effort
10	Municipality's contribution to Energy2020	_	That all relevant departments in the Municipality will optimise their renewable energy consumption and promote Energy2020.
11	Communication and dissemination of Energy2020	_	That Energy2020 is made visible, communicated and disseminated locally, nationally and globally.
12	Green entrepreneurship and business growth	_	To create green entrepreneurship, growth and employment
13	Energy tourism	_	To inspire green transition as well as create local growth for the benefit of businesses and employment.

Focus areas 10-13 are expected to reinforce Energy2020, and contribute to green growth and employment in Ringkøbing-Skjern Municipality.

Action plan Focus Areas 1-9 and 10-13

Focus Area 1: Energy consumption in housing and leisure accommodation

Status

Figure 3 presents the energy consumption in Ringkøbing-Skjern Municipality spread in sectors and in fuel types for 2013. This demonstrates that approximately 30% of the total energy consumption lies within residential housing and leisure accommodation. Residential housing accounts for the largest share by far.

Approximately 22% of the total electricity consumption comes from residential housing and leisure accommodation. 15% from residential housing and 8% from leisure accommodation.

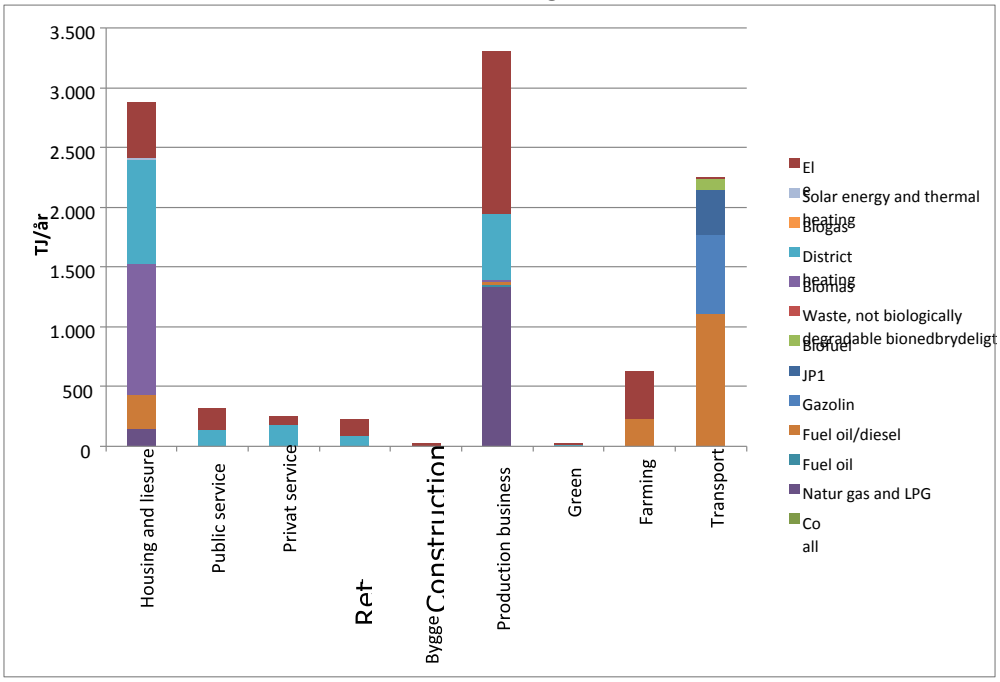


***Figure 3**: Expanded final energy consumption in Ringkøbing-Skjern Municipality according to Energy Accounts 2013.*

Perspectives

Within the current framework conditions in force and without further initiatives we expect that the heat consumption in the existing housing mass will drop by approximately 1% per year whilst the electricity consumption is expected to increase.

An assessment from SBI indicates that the ongoing renovation of buildings toward 2050 can reduce the heat consumption in housing by approximately 30%.

In regards to electricity, there is also a considerable potential for optimisation. However, this is expected to be negated by an increasing demand for electricity based energy services.

Implemented and already started initiatives

- Renovation of municipal buildings
- Pilot project regarding energy renovation of 120 single-family houses via Husets Energi
- Development project concerning two energy villages in Sdr. Vium and Lyne
- Fremtidens Feriehus concerning energy renovation of holiday homes
- Low energy construction for greenfield sites

Recommendations from stakeholder workshop

Local citizens recommend the following:

- Energy improvements in older houses outside the district heating areas should be given high priority
- Experiences from their village energy projects must be disseminated
- Initiatives have to be directed at villages with development potential and have a focus on newcomers/settlers
- Important that energy checks are free

Energy2020 objectives

1. 10% reduction in heat consumption in housing. Reduced energy consumption of approximately 288 TJ/year
2. The classical electricity consumption in residences and leisure accommodation to be kept constant (that is excluding electric cars and heat pumps)

Actions

- We will enter into strategic cooperation with relevant partners to reduce the energy consumption in permanent residences and holiday homes by 10%. For example, in cooperation with parish councils, rural areas, LAG, RAH, district heating plants, housing associations, homeowners' associations, Dagbladet Ringkøbing-Skjern and others
- This will be done by starting with already proven methods that have shown good results through solid energy counselling, free energy checks, advocacy stakeholders and information, as well as by testing new methods and partnerships.
- The utility companies will maintain focus on buying local energy savings and promotion of energy optimising.
- We will enter into strategic cooperation with relevant partners and use new efficient technologies to reduce the electricity consumption in residential housing and leisure accommodation. For example, in cooperation with housing associations, homeowners' associations, parish councils, letting agencies and utility companies, Energitjenesten, Vestjyllands Energi, Miljøforening and private businesses etc. For example, there is a large potential in holiday homes with swimming pools. This will ensure that the classical electricity consumption in residential housing and leisure accommodation in total will be constant.
- A working group will be organised and a group coordinator appointed to ensure the objectives of focus area 1, Energy consumption in residences and leisure accommodation. The Energy Council have appointed the head of the Energy Secretariat as the coordinator of the group. Inputs from the stakeholder workshop is included in the group's work. The objective of the group is in close cooperation with relevant parties to support, develop and implement projects that will secure the previously mentioned targets.

Focus Area 2: Industry and agriculture

Status

As presented in figure 3, industry alone accounts for approximately 33% of the total energy consumption and approximately 50% of the electricity consumption in Ringkøbing-Skjern Municipality.

Agriculture accounts for approximately 6% of the total energy consumption and approximately 15% of the electricity consumption.

Perspectives

The savings potential in industry and agriculture with a relatively short payback period (4 years) is estimated to be within the 10-20% range. This is not as big a potential as estimated for other sectors and is primarily due to the tax structure and requirement for a short payback period.

There is a significant potential to move energy consumption in industry so local wind power can be utilised more efficiently. This could be through cut off or reduced consumption in periods, however, the biggest reduction potential is for industry for certain periods of time to replace its fuel consumption with electricity from wind power.

Implemented and already started initiatives

Currently, initiatives in industry are primarily driven by the industry itself in cooperation with the utility companies. Industry can find savings relatively cheaply and meet their energy saving requirements. In agriculture, currently there is a transition taking place to renewable energy with subsidies from a national pool.

Recommendations from stakeholder workshop

Local citizens recommend the following:

- The utility companies should continue to focus on buying local energy savings.
- Utility companies and industry should work together on flexible energy consumption in industry that can promote use of local wind power
- Relevant stakeholders must work together for a changed tax structure and demonstration projects that can promote flexible consumption
- Project GRO should be implemented as a partnership between Municipality, Business Centres, Educational Centres and the local utility companies

Energy2020 objectives

1. The current energy consumption within industry is maintained via energy optimisations
2. 20% of industry's energy consumption is restructured to renewable energy.
3. The industry's energy consumption is structured so flexible use of wind power for industrial processes is possible

Impact of transition of 20% of the industry's consumption to renewable energy

Increased share of renewable energy: 1% Reduced energy consumption: (1/3 via utilisation of heat pumps)

Actions

- We will enter into strategic cooperation with relevant parties to, via energy optimisations, maintain the current energy consumption in industry as well as switch to renewable energy and thus enable flexible use of electricity from wind power for industrial processes to become possible

- Project GRO, a collaboration between the Municipality, the Business Centre, the Education Centre and local utility companies is initiated. Free energy checks are offered for select businesses

- The utility companies will continue to focus on buying local energy savings and contribute to promotion of energy optimisations

- Together we will work for a tax structure and demonstration projects that promote flexible consumption

- Via new networks, we will inspire, share knowledge and promote energy management amongst businesses, especially within manufacturing and agriculture

- A working group will be established and a coordinator appointed to ensure the targets are met in Focus Area 2, Manufacturing and Agriculture.
  The Energy Council has selected an Energy Council member and Director of the Business Council Ringkøbing Fjord as the group's coordinators. Input from the stakeholder workshop is included in the group's work.
  The group's purpose is to collaborate with relevant partners to support, develop and implement projects that ensure the aforementioned objectives are met.
  For example, cooperation with the Business Council, utility companies, Vestjysk Landboforening, Vestjysk Lederforum, Danish Energy Agency, universities, knowledge institutions and private enterprises etc.

Focus Area 3: Transport

Status

The transport sector alone accounts for approximately 22% of the total energy consumption. Figure 4 presents the distribution of the energy consumption in the transport sector.

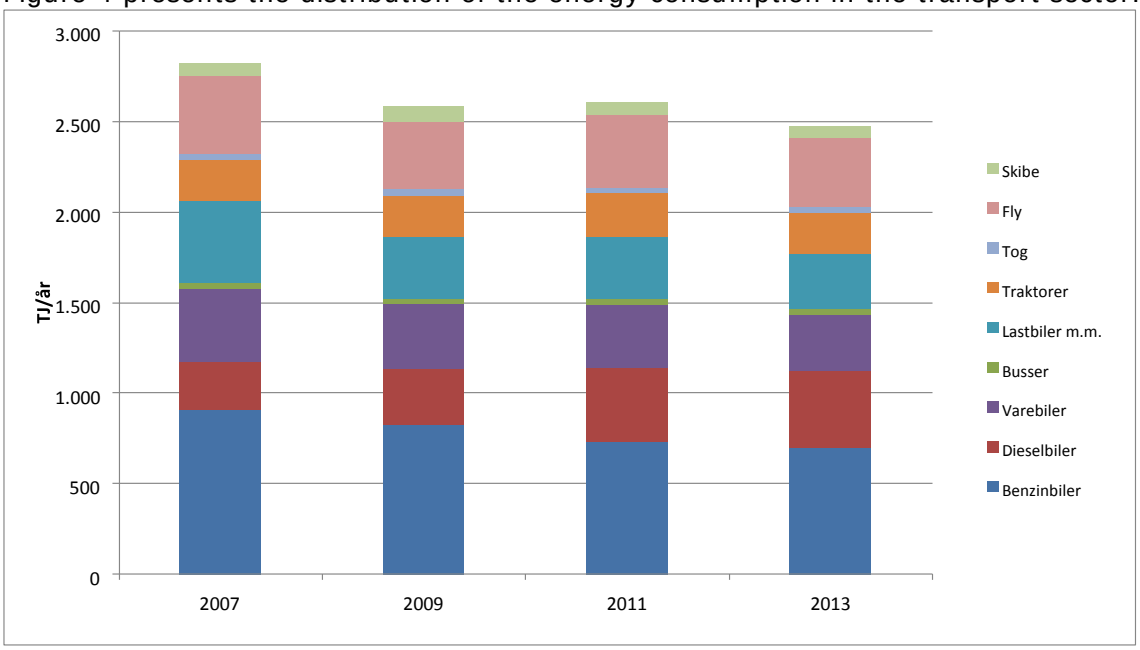
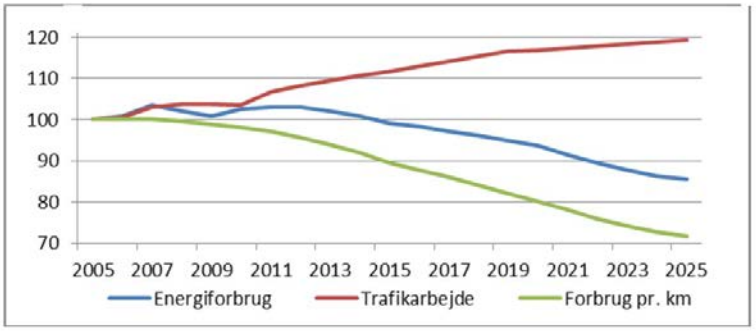


***Figure 4**: Distribution of the energy consumption in the transport sector according to Energy Accounts 2013.*

Perspectives

Figure 5 illustrates Danish Energy Agency's projection of transport requirements and fuel for road transport. Demand for road transport is anticipated to increase, whilst energy consumption is expected to drop as energy consumption per driven kilometre is falling. Electricity and gas are expected to cover under 0.5% of the total transport consumption needs in 2020.

***Figure 5**: Projection of the expected development in the transport work and energy consumption for road transport without further political initiatives locally, nationally or in the EU according to the Danish Energy Agency's basis projection 2014.*



The Danish Energy Agency's future scenarios for 100% renewable energy in Denmark in 2050 points toward electricity for transport as a central element in the energy system. A key driver is that electric cars can reduce total energy consumption for transport significantly as they are 4-5 times as energy efficient as gasoline and diesel vehicles.

For heavy transport, gas is expected to play a significant role.

Implemented and already started initiatives

- Analysis via the electronic citizen panel where citizens driving habits was examined, revealed that there is significant potential for electric cars. This is particularly the case for the many families with two cars
- Fleet analysis of the municipality's own vehicles demonstrated that 41 vehicles can potentially be replaced by electric cars
- Test of four electric cars in Health & Care
- The local business, Byensbil.dk, has established a car sharing scheme in villages Højmark, Borris, Lem og Rækker Mølle, and most recently in Ringkøbing
- Publically accessible charging stations are located at the train station in Borris and at Netto in Ringkøbing
- At ESØ south of Tarm, HMN has established a gas filling station for renovation trucks and private cars alike. Here for example, German tourists are able to refuel their gas vehicles

Recommendations from stakeholder workshop

Local citizens recommend the following:

- The Municipality must enter into strategic partnerships with big businesses and utility companies regarding transport. An example could be cooperation with Arla regarding green gas for heavy transport.
- The Municipality should make certain demands toward Midttrafik regarding green transport. (This could lead to higher prices)
- The Municipality should lead the way with green vehicles and reduced transport requirements via video conferences.
- Charging stations at the Municipality's buildings and grocery stores.
- It should be possible to test an electric car and to receive training in green driving when taking a driving licence.
- Local car dealerships should encourage purchasing cars that are with low fuel consumption.

Energy2020 objectives

1. 10% reduction in gasoline and diesel consumption for road transport in 2020.
    - Via more energy efficient gasoline and diesel vehicles.
    - More electric cars and more gas for heavy transport.

Impact with 10% reduction in energy consumption for road transport

Increased share of renewable energy: 1%
Reduced energy consumption: 177 TJ/year

Actions

- We will enter into strategic cooperation with relevant parties to ensure aforementioned objectives. For example, cooperation with private enterprises, utility companies, Midttrafik, ESØ, HMN, Technologic Institute, local car dealerships, car sharing schemes such as Byensbil.dk etc.
- We will raise awareness of green transport, amongst other things, through procuring electric cars and cooperation regarding the establishment of infrastructure for green

transport. In addition, in collaboration with Midttrafik we will examine technological as well as economic opportunities for green public transport.

- We will set up a working group and appoint a coordinator to ensure the targets in Focus Area 3, Transport, are met. Input from the stakeholder workshop are included in the group's work.

Focus Area 4: District heating

Status

District heating plays a central role in Ringkøbing-Skjern Municipality's energy supply. In 2013 district heating covered half of the Muncipality's heating demand, see figure 3. There is a relative high district heating coverage for a rural municipality. This is a reflection of the fact that all the bigger towns and some of the smaller towns in the municipality have district heating.

In 2013 approximately 75% of the district heating was based on natural gas whilst the remaining supply was primarily based on biomass. However, within in recent years a considerable transitions has taken place, resulting in approximately 60% of the district heating supply being based on natural gas. Figure 6 presents the district heating production distributed by fuel types today. In particular, solar heating and surplus heat have started to replace natural gas.

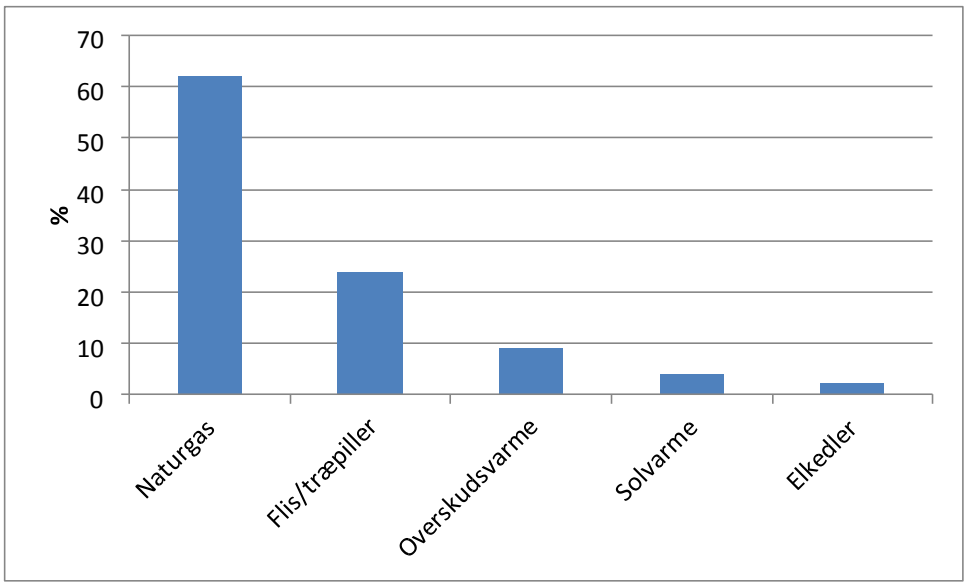


***Figure 6**: District heating production distributed by fuel types according to draft strategy for district heating structure.*

Perspectives

In years where increasingly more wind power is installed, the district heating system takes on an added role for the future's integrated energy system. This is due to the large storage capacity that exists in the district heating plants' net and the big accumulation tanks at the district heating plants that can be utilised as an inexpensive storage of surplus energy from wind power via efficient heat production for big heat pumps and electric boiler.

Approximately 50% of the Municipality's heating demand is currently met via district heating. An analysis by Aalborg University estimates that the district heating coverage can be increased by up to 70% if total connectivity to the district heating system is achieved in the existing district

heating areas and in individually heated areas in the immediate vicinity of district heating areas. Figure 7 demonstrates that many of the municipality's oil heated residential houses are placed in towns with district heating.

Implemented and already started initiatives

Ringkøbing-Skjern Municipality is working closely together with the municipality's district heating plants on drafting a strategy for the future district heating structure. At the end of 2013 and in the beginning of 2014, meetings were held with each district heating plant in the municipality. Proposal for targets for district heating is from this strategy.

Recommendations from stakeholder workshop

Local citizens recommend the following:

- The municipality must take the lead and in cooperation with the plants, specify the future supply areas so citizens know what to expect and avoid misguided investments
- Biomass to district heating is a transitional solution. Over time there needs to be a focus on solar heating, heat storage and big heat pumps so our wind power can be used efficiently
- We should participate in development projects with a focus on the flexible use of district heating plants' small natural gas engines for electrical production when the wind is not blowing
- Investigate whether remote cooling is relevant and where it is possible to establish
- We have to focus on optimisation and cooperation between the district heating plants

Energy2020 objectives

1. 60% of the district heating supply is based on renewable energy (an increase from 40 to 60%)
2. Total connectivity to district heating in existing district heating areas.
3. Gradual increase in focus on the integration of wind power in district heating.

Impact of 60% renewable energy in district heating (40% today)

Increase in share of renewable energy: 5%
Reduced energy consumption: -

Actions

- We will enter into strategic cooperation with relevant parties to secure the overall objective. For example, cooperation with the district heating plants, Dansk Fjernvarme, Dansk Energi, utility businesses, HMN, Aalborg University, Aarhus University, neighbouring municipalities, Rural District Council, parish councils and private businesses etc.

- A strategic district heating structure will be drafted by the Municipality's Plan Department. The plan is in consultation with the Energy Secretariat and the Energy Council.

- The Energy Council has chosen the district heating member from the Energy Council, director of Ringkøbing Fjernvarme as its group coordinator in this policy area.

Focus Area 5: Individual heating

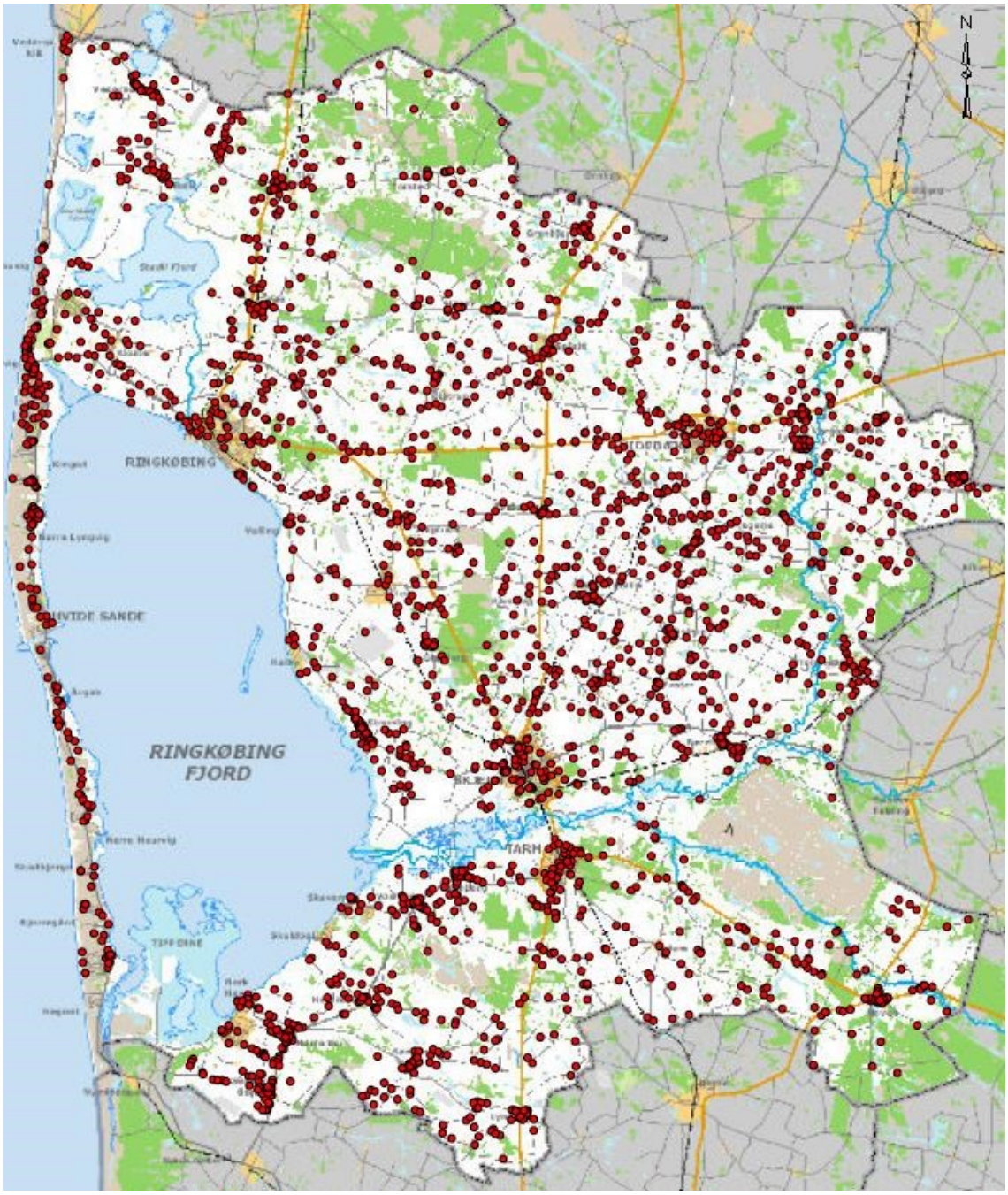


Figure 7: *Oil heated properties in Ringkøbing-Skjern Municipality.*

Status

Almost half of the Municipality's heating supply is currently based on individual heating. The distribution of the individual heating based on the heating system is presented in figure 8.

As demonstrated in the figure, approximately 5% of heating stems from natural gas, 10% from oil and 33% from biomass. Approximately 5% of the heating is based on electricity and this is most common in the Municipality's approximately 10,000 holiday homes.

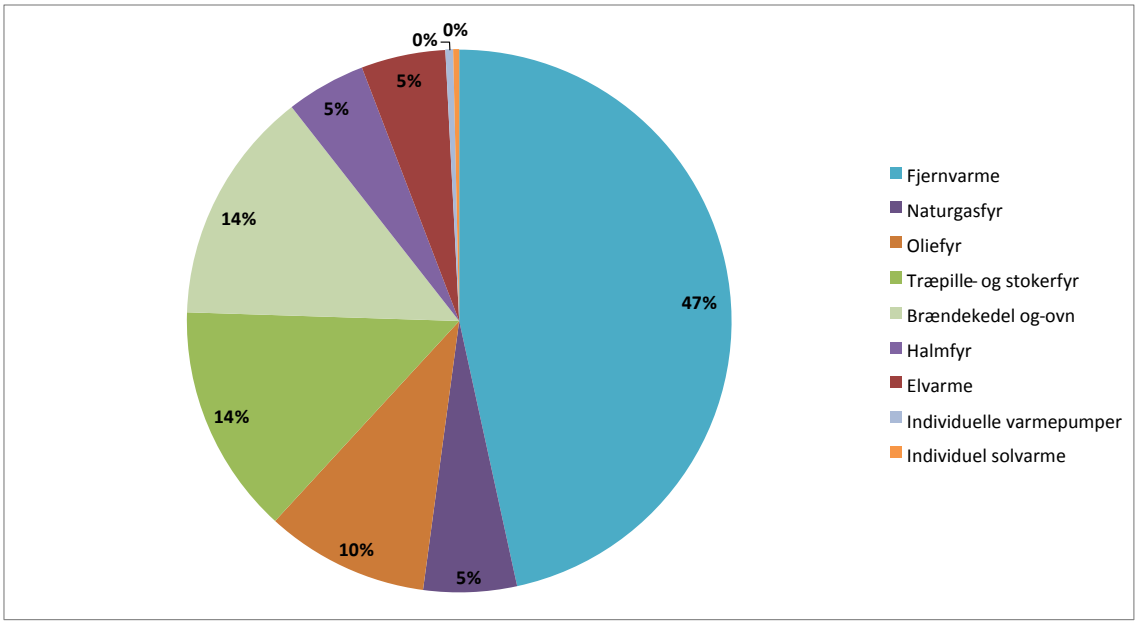


***Figure 8**: Heating distributed on heating types according to the Energy Accounts 2013.*

According to the Municipality's chimneysweepers, there are approximately 3,700 oil boilers in the Municipality. This number is a reduction in comparison to 2007 when there were approximately 4,400 oil boilers.

According to HMN-Naturgas, there are close to 2,300 individual natural gas boilers in the Municipality. The number has increased slightly since 2007, when there was 2,200 individual natural gas boilers.

Approximately half of the biomass consumption for wood burners is consumed in the Municipality's holiday homes.

Perspectives

Future heat supply outside the district heating areas is expected to be based on biomass, heat pumps and solar heating.

In their scenario analysis, the Danish Energy Agency assume that biomass will only be a limited resource in the long term and will only be given priority in areas where it is not possible to use electricity. Individual heating is assumed to be based on heat pumps and solar heating.

Implemented and already started initiatives

- Development project regarding two energy villages in Sdr. Vium and Lyne.
- Information meeting concerning replacing of oil boilers held on 24 February 2015.
- Strategy and inspiration catalogue for renewable energy solutions in the rural areas in cooperation with municipalities in Central Denmark Region.

Recommendations from stakeholder workshop

Local citizens recommend the following:

- Citizens with individual supply must be made aware if they district heating is possible in their area in the future. If district heating is not possible in the given area, citizens must be informed of the experiences from our village energy projects.
- Initiate a business development initiative aiming to bring down prices of heat pumps.
- Development of ESCO concepts where consumers only pay for the actual heating, leaving the operator to invest in and operate the heating system.

Energy2020 objectives

1. All oil heated housing in the district heating towns are converted to district heating.
2. Half of all housing with oil boilers outside the district heating towns are converted to renewable energy with a special focus on converting to heat pumps.
3. Implementation of energy renovation of housing in the countryside coordinated with redevelopment plans for surplus buildings and new locations for energy plants such as wind turbines and biogas plants.

2/3 of the oil heated housing have switched to district heating, heat pumps or biomass.

Increase in share of renewable energy: 2% Reduced energy consumption: (1/3 through supply with heat pump)

Actions

- We will enter into strategic cooperation with relevant parties to ensure aforementioned objectives, for example in cooperation with LAG, RAH, Energitjenesten, HusetsEnergi.dk, district heating plants, Rural District Council, parish councils, local media and private businesses etc.

- A working group is established and a coordinator will be appointed to secure the objectives in Focus Area 5, Individual Heating.

- The Energy Council will select the Head of the Energy Secretariat as the coordinator of the group.

- The group is responsible for ensuring close cooperation with relevant parties to support, develop and implement projects that will secure the aforementioned objectives. Inputs from the stakeholder workshop will be included in the group's work.

Focus Area 6: Wind power

Status

Figure 9 illustrates the electricity production distributed in municipalities. The lower part of the bar displays the actual electricity production in 2013, the red the electricity production in 2014 whilst the green shows the production capacity in selected wind turbine areas in the municipalities' wind turbine plans which have not been fulfilled yet.

The electricity production from wind power is currently significantly higher in Ringkøbing-Skjern Municipality than in other municipalities in the Central Denmark Region. This has to be understood in relation to the fact that the Municipality is the largest in the country and that the wind resources are very good. Currently, there is 384 MW wind power installed in the Municipality.

At full realisation of planned wind turbines, the production capacity in the municipality will reach around 5,000 TJ/year. In comparison, the total electricity consumption in the municipality in 2013 was in the roughly 2,500 TJ.

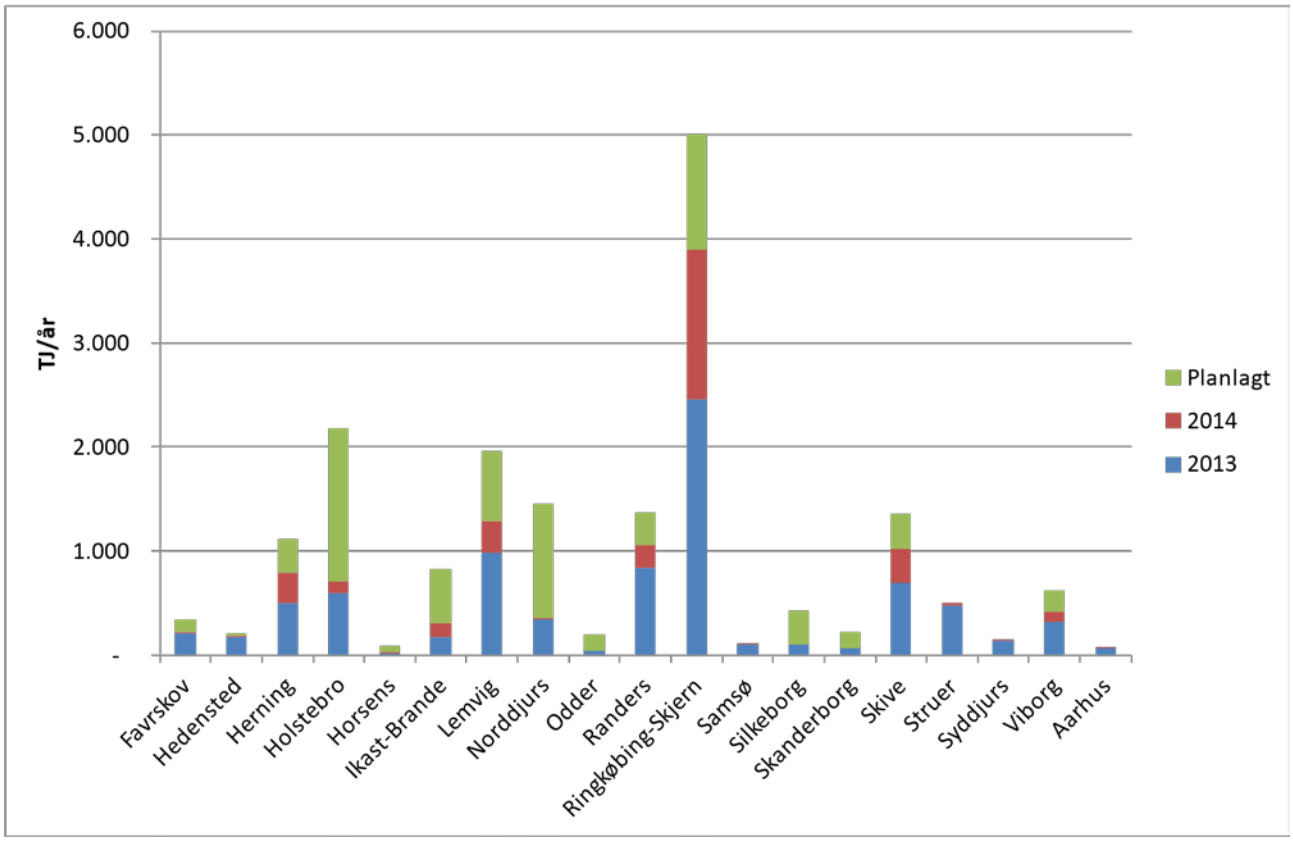


Figure 9 *Electricity production from wind power in 2013 and 2014 as well as planned production in the municipalities.*
(Source: Danish Energy Agency's master data for wind turbines)

Perspectives

Wind power is going to play a crucial role in the future energy system in Denmark. Danish Energy Agency indicates in the report "Energy scenarios towards 2020, 2035 and 2050" a number of scenarios for an energy system based on 100% renewable energy. The wind scenario, which

underlies a number of other analyses, indicates approximately six times more electricity generated from wind power is needed in comparison to current supply.

The Danish Energy Agency points to a continued wind power expansion both onshore and offshore but also states that offshore wind power is significantly more expensive than onshore. The Danish Energy Agency's anticipates that electricity from onshore wind turbines will still cost approximately half of electricity than offshore wind turbines in 2030.

In Ringkøbing-Skjern Municipality, there are good conditions for installing wind turbines. Good wind conditions makes it commercially attractive to install wind turbines. In addition to this, there are good opportunities to plan ahead, as many of the municipality's older turbines have to be decommissioned in the coming years. In 2020, 140 of the municipality's 240 turbines will be more than 20 years-old.

With the replacement of smaller turbines with newer and bigger turbines, we will be able to increase the electricity production from wind power significantly with a fewer number of turbines.

Implemented and already started initiatives

- Good examples of big projects with local ownership are publicised, for example, in Hvide Sande and Nørhede-Hjortmose
- Spent 90% of the funding from green scheme for projects within a radius of 4.5 kilometres from wind turbines. In September 2015, an approximately DKK 28.8 million has been allocated to projects
- Working on near shore wind turbines in the sea off Hvide Sande
- Establishment of the Hvide Sande Service Group, which consists of 33 businesses and associations in and around Hvide Sande. The group is working for the development of Port of Hvide Sande in relation to the coming offshore tasks

Recommendations from stakeholder workshop

Local citizens recommend the following:

- Ambitious expansion of wind power should continue
- Continued focus on keeping investments and employment in the local area
- Wind turbines should to the largest possible extent be clustered in larger groups to exploit the wind in the best possible manner and indemnify select areas from wind turbines
- Better ways of using the produced wind power flexibly in the local energy supply

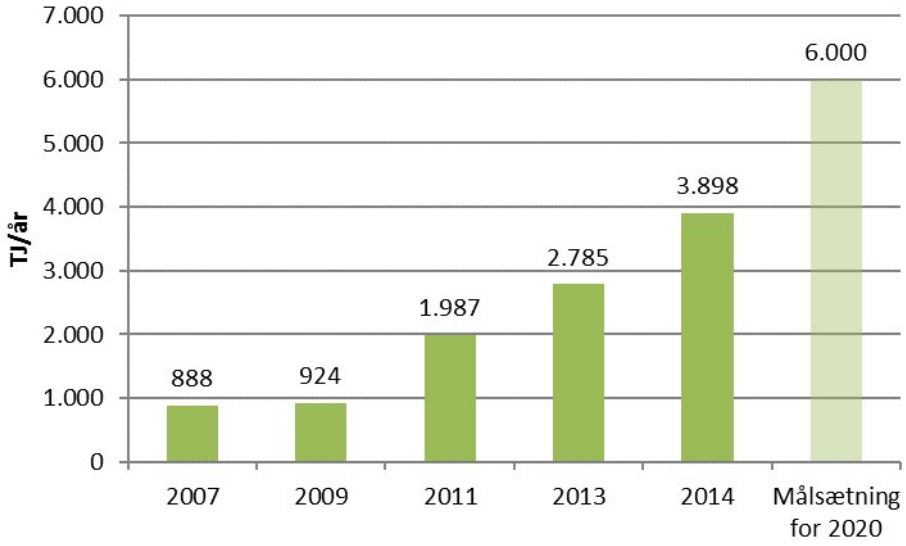


Figure: Onshore wind in Ringkøbing-Skjern Municipality. The figure illustrates the total annual electricity production from onshore wind turbines in Ringkøbing-Skjern Municipality as well as the new target for 2020.

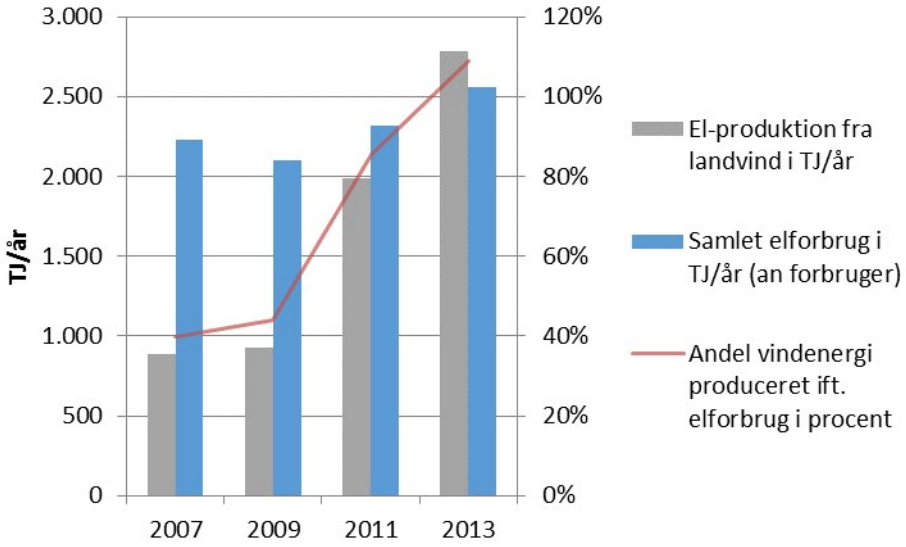


Figure: Electrical consumption and wind energy. The figure illustrates the development in the total electrical consumption compared to the development in the total production of RE-electricity in Ringkøbing-Skjern Municipality from 2007 to 2013 as well as the development of this in percentage.

Energy2020 objectives

1. Wind power to be installed with an annual electricity production of approximately 6,000 TJ/year, equal to approximately 2.4 times as much electricity used.
2. The establishment of a high level of local ownership is sought for new wind turbine projects.

Increase in share of renewable energy: 22% Reduced energy consumption: -

Actions

- The Energy Council has chosen the Energy Council's Chairman and Deputy Chairman as coordinators to secure Focus Area 6, Wind Power.
  Must take place in close cooperation with the City Council, the Economical & Business Committee and the Technical & Environmental Committee

- Allocation of necessary resources for wind turbine case handling within the existing staff allocation.

- Local ownership given high priority.

- We will promote near shore wind turbines in Vesterhav Syd.

Focus Area 7: Solar cells (photovoltaics)

Status

Approximately 2,000 photovoltaic systems have been installed in the municipality with an annual electricity production of approximately 37 TJ/year equating to approximately 1.6% of the electrical consumption in the municipality.

There are also local plans for three large field based solar cell power plants which, if installed, will bring the total electricity production from photovoltaics up to 5% of the municipality's total electricity consumption. Currently is not known whether all three solar cell power plants will come to fruition.

After a strong growth in the installation of photovoltaic systems on ordinary detached houses during 2012 and 2013 in particular, the installation stalled because of lack of clarity in regards to future subsidy regulations. These regulations have now been clarified and in spring 2015 it became possible to apply for subsidy for the installation of a total 60 MW. This total pool is divided into four categories: rented accommodation, private housing, solar guilds and for non-profit housing organisations. In 2016 and 2017 there will be a ceiling of 20 MW photovoltaics a year, equal to around 3,000 photovoltaic systems for households per year in Denmark.

Perspectives

Any ceiling on the expansion of photovoltaics is due to the fact that electricity production costs until now have been relatively high for electricity produced because of technological efficiency. Figure 10 from July 2014 illustrates the electricity produced from onshore wind power. In comparison to figure 10a from March 2015 (only nine months later), the price of electricity from big solar cell power plants dropped significantly by more than 30%. Therefore, electricity from big solar cell power plants is now cheaper than electricity from offshore wind as well as combined heat and power plants based on natural gas. Now that the price of solar-based electricity is reduced by 1/3, electricity from big solar cell power plants has once more become an interesting potential venture.

Giant solar cell power plant at Hjortmose Visitor Center

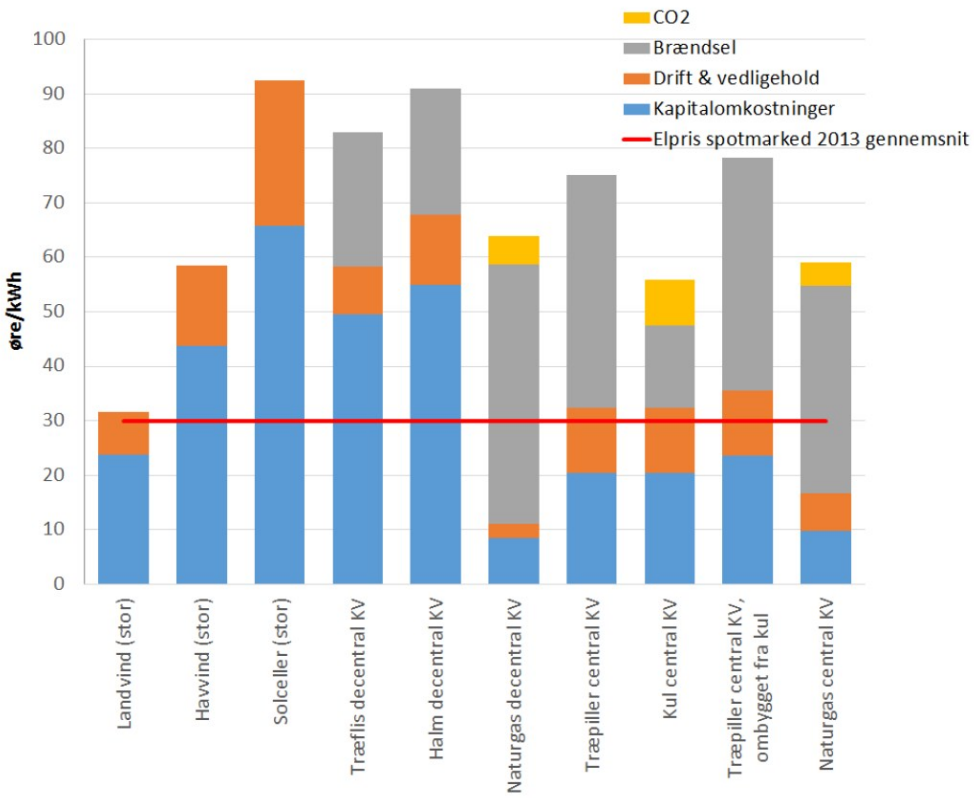


Figure 10: *Electricity production prices for energy plants, Danish Energy Agency, July 2014.*

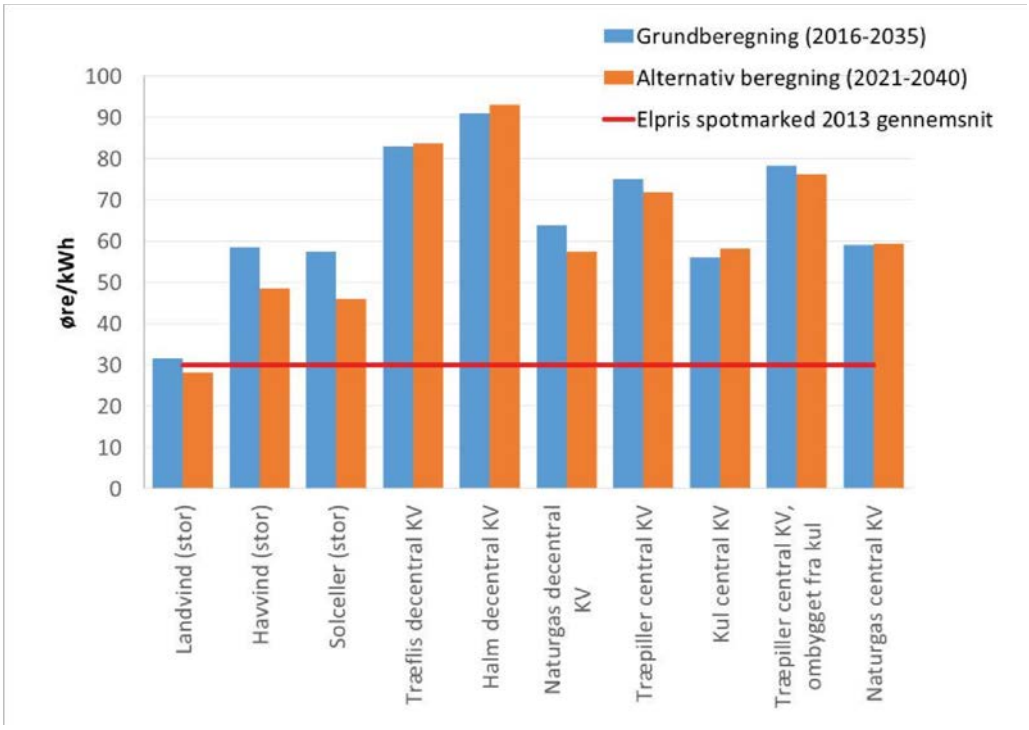


Figure 10a: *Costs for electrical production today and in the future. KV=Combined Heat and Power Plant. (Source: Danish Energy Agency, March 2015, taken from midt.energistrategi)*

Implemented and already started initiatives

- Prepared campaign for photovoltaics up to the end of 2012.
- Prepared local plans for field based power plants.
- Installation of 10 photovoltaic systems on municipal buildings.

Recommendations from stakeholder workshop

Local citizens recommend the following:

- We have to expect a limited expansion, given that the temporary provisions will run out as photovoltaics is not economically viable. This should be reflected in our ambition. (This input, however, was before photovoltaics prices fell by 30%)
- We have to focus on big power plants and ensure solutions that are aesthetically acceptable.

Energy2020 objectives

1. The planned field based solar cell plants power are implemented so that photovoltaics provide roughly 5% of the municipal electricity consumption. If the planned plants do not come to fruition, then the production from other solar cell plants and more wind power will substitute this
2. We will follow the price development in this field and put further emphasis in this area as photovoltaics become more competitive.

Impact of implementing three field based solar cell power plants

Increased share of renewable energy: 1%
Reduced energy consumption: -

Actions

- We will enter into strategic cooperation with relevant parties to secure the aforementioned objectives, for example, in cooperation with photovoltaic businesses, landowners, Energinet.dk, RAH and other private businesses etc.

- A working group is established and group coordinator appointmented to secure the objectives in Focus Area 7, Solar Cells, i.e. the three field based solar cell plants

- Should one of the three already approved field based solar cell power plants not be established, the group will focus their work on installation of other solar cell power plants with the same or bigger energy production

- The group will follow the price development on photovoltaics, promote new solar cell plants with extensive local ownership, perhaps in a coop setup

- The task of the group is in close cooperation with relevant parties to support, develop and implement projects that can secure the aforementioned objectives. Inputs from the stakeholder workshop will be included in the group's work

Focus Area 8: Local biomass production

Status

The total use of biomass in Ringkøbing-Skjern Municipality was approximately 1,650 TJ/year in 2013. By comparison, the total energy consumption in Ringkøbing-Skjern Municipality was approximately 10,000 TJ/year.

Biomass consumption has risen in Denmark in recent years and this trend will continue as several district heating plants are planning to switch from fossil fuels to biomass. This tendency is apparent throughout large parts of Europe.

Perspectives

Figure 11 illustrates a calculation of the potential for local production of bio energy for municipalities in Central Denmark Region prepared by Aarhus University. Firewood and wood chips for energy purposes are collected as residue from forests, hedgerows and gardens whilst energy crops can be grown on local farmland. The figure illustrates the potential, if 15% of the grain area in the municipality is allocated for production of energy crops. By comparison, the previous Energy2020 plan had a target of 5% of farmland being used for energy crops.

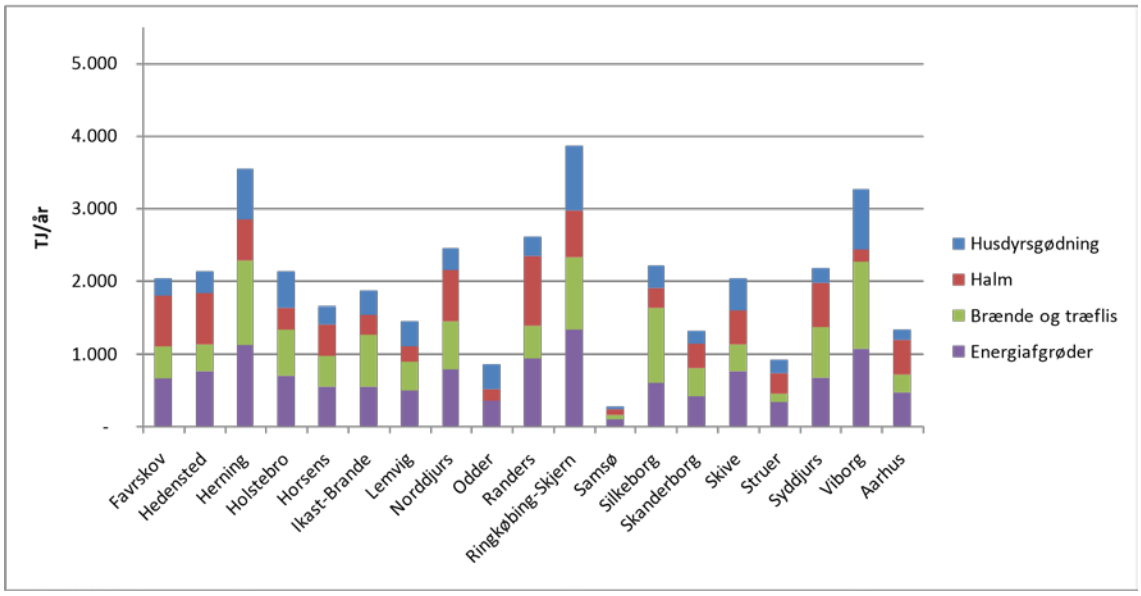


***Figure 11**: Biomass potential distributed in municipalities according to biomass inventory from Aarhus University.*

Wood from trimmings/pruning (thinning out trees), logging residues, straw, manure and other residues can be utilised in a sustainable manner under the right conditions, whilst crops and forests established with the sole aim of energy production can have negative derived environmental effects as they push away nature and/or food and fodder production.

Initiated and already started initiatives

- Fields of energy willow have been established in the area
- To create an overview of the local opportunities, a detailed memo has been drafted showing local biomass resources and possible usage.

Recommendations from stakeholder workshop

Local citizens recommend the following:

- Fodder, food, forest and nature have priority over energy crops
- Establishment of forest must be given high priority as it serves a range of purposes at the same time: wood production, recreation, tourism, nature, groundwater protection and biomass for energy
- Residue biomass should be used for energy when possible

Energyi2020 objectives

1. With an increase in production of biomass for energy, it is necessary that current level of production of food and fodder in general is maintained
2. Use of biomass for energy must primarily be based on the utilisation of residue products from farming and forestry
3. Biomass from nature areas will also be used if it is linked to an environmental benefit

Impact of using local resources

Increased share of renewable energy: - Reduced energy consumption: -

Actions

- We will enter into strategic cooperation with relevant parties to secure the aforementioned objectives, for example with organisations and businesses within farming, forestry and the environment

- A local working group will be established and a coordinator appointed to secure the objectives in Focus Area 8, Local Biomass Production

- It will be examined to what extent household waste is relevant in relation to energy production

- It will be examined to what extent residue products/bio economy is of interest to pursue

- Biomass can be converted to energy. It will be examined what other types of products can be created out of biomass and an catalogue of ideas drafted

- The group has been tasked to work in close cooperation with relevant parties to support, develop and initiate projects that will secure the aforementioned objectives. Input from the stakeholder workshop will be included in the group's work.

Focus Area 9: Biogas

Status

Figure 12 illustrates livestock density, natural gas distribution pipes, existing cooperative biogas plants, plants under construction and planned plants. The figure demonstrates that there are very good conditions for establishment of new biogas plants in Ringkøbing-Skjern Municipality. The livestock density is among the highest in the country.

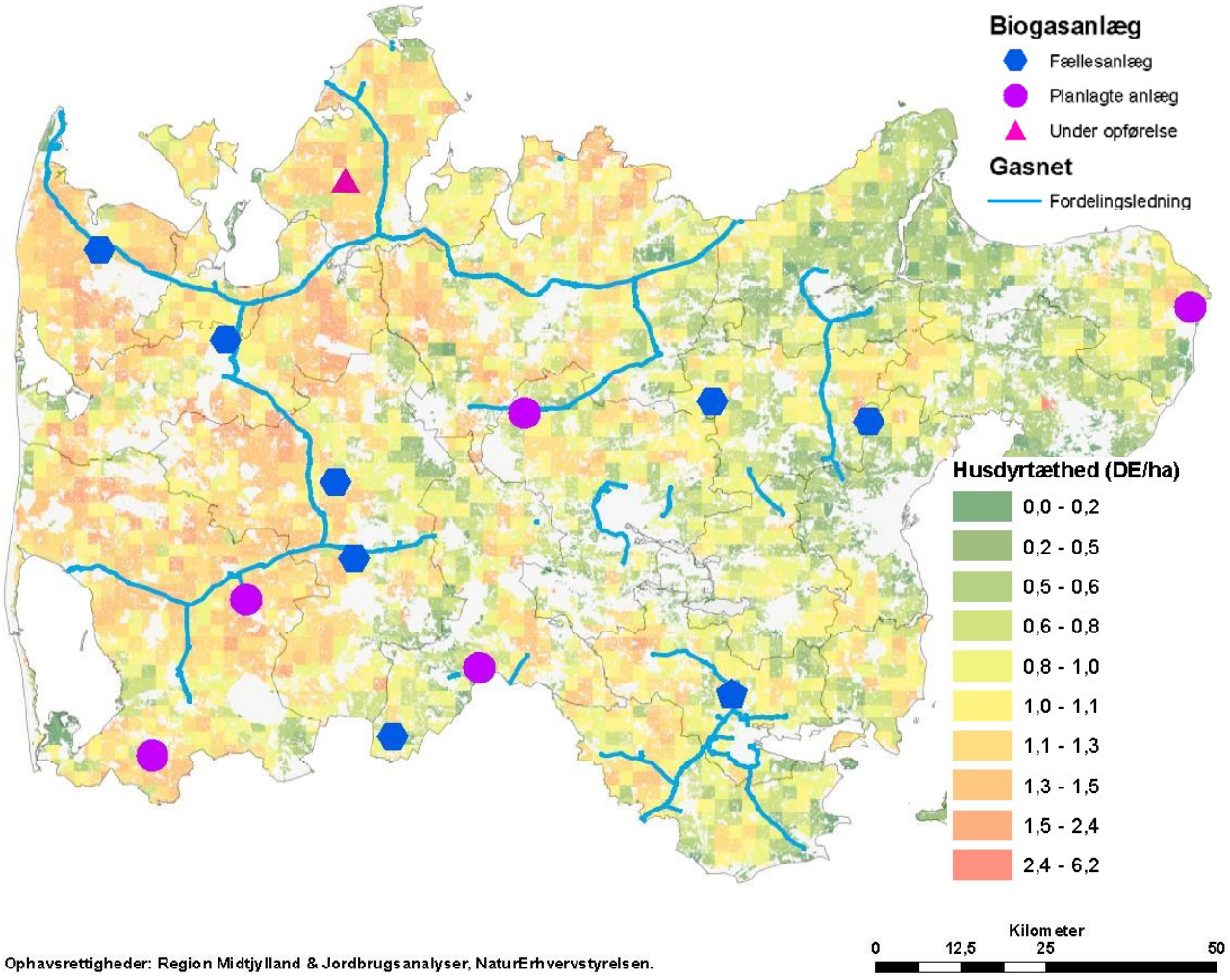


***Figure 12**: The livestock density, natural gas distribution pipes, existing cooperative biogas plants, plants under construction and plants being planned.*

Table 2 illustrates that only 2% of the municipal manure is currently utilised for biogas production. A range of new plants are on their way and being planned, i.e. three big farm plants in connection to Bioenergi Vest and Viftrup farm plants at Spjald. In addition to this Arla has plans of a big shared biogas plant at Videbæk which is expected to be constructed before 2018. By these means, approximately half of the manure in the municipality can be utilised for biogas production. Table 2 illustrates the expected biogas production from existing and planned biogas plants. In addition, in the latter part of the Summer 2015, CombiGaS has announced new plans for additional production plants. These are not included in table 2, which is from April 2015.

Plant	Total gas production, TJ/year	From manure (estimate), TJ/year
Existing plant	46	21
Bioenergi Vest (phase 1, three farm plants)	237	172
Viftrup farm plant at Spjald	65	38
Arla biogas	400	234
Total	**748**	**465**
Total potential in the municipality (estimate)	**1,800**	**900**

***Tables 2**: Biogas production at existing biogas plants as well as expected biogas production at planned biogas plants. (April 2015)*

Perspectives

In a future energy system without fossil fuels, biogas will play a key role. The reason is that the storage capacity is very high and biogas can be converted to bio natural gas and be used for energy production during periods where there is not energy production from variable energy sources such as wind and sun. In addition to this, gas can be utilised for industrial purposes and heavy transport.

Looking beyond energy production, biogas production gives a number of consequent effects for the environment, climate and agriculture. The release of methane gas from farming is reduced, loss of nutrition to the surrounding environment is reduced, nutrition is re-circulated and the farmer's yield from cultivation is improved.

In todays market, there is already a situation where there is a lack of organic waste for biogas resulting in the plants being in internal competition for the best waste. The addition of large quantities of energy crops to the biogas plants is seen as a temporary solution as energy crops is may only constitute a maximum of 12% of the gasified biomass as of 2018.

Full utilisation of the potential for biogas production requires that we generate large amounts of other types of biomass with a high energy content that can digest together with slurry in the biogas plants of the future.

In the short term, we can disseminate the experiences from trials with use of deep litter and straw for biogas, enabling this to become standard practice in a big scale in future biogas plants. In addition to this, crop planted after the main crop is harvested, generate significant volumes of biomass for biogas, however this will require the development of new crop rotation in agriculture and the possibility of limited fertilisation of crops that does not increase the leaching of nutrients.

A smaller contribution to biogas production may come from landscaping and organic household waste. Utilisation of this, however, requires that a separate subsidy for harvesting biomass from natural areas is established and that source sorting is introduced as well as pre-treatment of organic household waste.
In the longer term, the biogas process is also expected to be based on by-products from new bio refineries.

Implemented and already started initiatives

- The development of the decentralised Ringkøbing-Skjern Biogas model, BioEnergi Vest
- BioEnergi Vest have been approved for DKK 10 million in subsidy from EUDP, ownership has been transferred to Ringkøbing-Skjern Forsyning, and an environmental impact assessment has been prepared
- Spjald Fjernvarme and Viftrup Biogas has jointly submitted a project proposal for a farm biogas plant. The plant is now finally approved and the construction has just begun
- Arla is working on the establishment of a big shared biogas plant at Videbæk

Recommendations from stakeholder workshop

Local citizens recommend the following:

- Utilisation of 80% of livestock manure for biogas is an ambitious target, however, should be adhered to
- The Bioenergi Vest plan should be thought through again, as we now considering larger biogas plants than originally planned
- Big shared biogas plant at Arla in Videbæk is expected to be constructed before 2018
- Regarding new and existing plants, we need to focus on the demonstration of new biomasses for biogas on a large scale including for example, from straw, from landscaping and perhaps organic household waste
- Demonstration plant with upgrading of biogas to natural gas quality with the use of electricity from wind power should have high priority

Energy2020 objectives

1. To produce biogas corresponding to a minimum of 1,230 TJ/year
2. The following businesses are expected to contribute: Viftrup Biogas, Bioenergi Vest, Arla, CombiGaS and others
3. Establishment of a demonstration plant for the utilisation of straw and other residue biomasses for biogas production as well as upgrading of biogas to natural gas quality with the use of electricity from wind power
4. Explore opportunities for production plant for biofuel, for example, methanol
5. Biogas volumes from existing plant to be maintained, possibly increased
6. Opportunities for establishment of new biogas plants will be examined

Impact of implementation of Bioenergi Vest phase 1, Arla, Viftrup Biogas and Bioenergi Vest phase 2, is expected to be twice as big as phase 1 (estimate)

Increased share of renewable energy: 12.3 %, (of this 7.5 % from plant in tabel 1)
Reduced energy consumption: -

Actions

- We will enter into strategic cooperation with relevant parties to secure the aforementioned objectives, for example with Viftrup Biogas, Combigas, Bioenergivest, Arla, HMN, district heating plants, landboforeninger, ESØ and private businesses etc.

- Establishment of a dialogue and experience group and appointment of a coordinator to secure the objectives of Focus Area 9, Biogas.

- The Energy Council has selected the director of Viftrup Biogas, former member of the Energy Council, as the coordinator for the dialogue and experience group.

- Allocation of required resources for case handling within the existing staffing level

- Examine to what extent organic household waste is relevant in relation to biogas.

- The tasks of the group must take place in close cooperation with relevant parties to share knowledge and to support, develop and implement projects that secure the aforementioned objectives. Inputs from the stakeholder workshop will be included in the group's work.

Foto: Setting sail in Borgmesterhavnen.

Supplementary Focus Areas, 10-13

Focus Area 10: The Municipality's contribution to Energy2020

Status

The vision "The self-sufficient energy municipality" is from the Plan Strategy 2008. A united City Council has subsequently supported and maintained Energy2020 and via the Economic and Business Committee, organised the work in the Energy Council and the Energy Secretariat.
The City Council/Municipality cannot single-handedly ensure transformation to 100% renewable energy, as this demands close cooperation and dialogue with citizens, businesses, suppliers and local stakeholders. The City Council has previously adopted the Energy2020-Strategy 2011-2014, the Theme Plan for Wind Turbines, Energy2020-Policy 2015-2018 and now the strategic energy plan Energy2020-Strategy 2015-2018. The municipality has been very active in regards to the transition to 100% renewable energy across a broad range of projects within energy optimisation and energy production as well as planning and technical case handling of energy plants.
In 2011, the Mayor signed the EU Covenant of Mayors.

Perspectives

Ringkøbing-Skjern Municipality as an organisation has a long reach in regards to the transformation to 100% renewable energy. This is the case due to its many employees and financial turnover, where the Municipality addresses energy priorities and green procurement. Citizens and businesses alike are inspired to think and act green when the Municipality takes the lead and shows the flag. All for the common good.

Energy2020 objectives

1. That the Municipality meets the requirements in the EU Covenant of Mayors. This entails a 20% CO2-reduction via a 20% increase in the energy efficiency and 20% RE in 2020. http://www.covenantofmayors.eu/index_en.html
2. That the Municipality signs the Compact of Mayors and meets the requirements. http://www.compactofmayors.org/content/uploads/sites/14/2015/07/Compact-of-Mayors-FullGuide_July2015.pdf
3. That the Municipality, as the biggest business in the area, takes the lead with the green agenda.
4. That the Municipality in its holistic prioritisation, incorporates sustainability and renewable energy.
5. That Energy2020 is embedded in each municipal department.

Actions

- The municipality will ensure more sustainability and renewable energy via its procurement, priorities, actions and policies.
- The municipality will carry out long-term energy renovation of its buildings and focus on energy efficient buildings and low energy consumption in its new buildings, having been allocated DKK 10 million per year for 4 years. Objectives will be aligned with the Covenant of Mayors.
- The municipality will contribute to promote green transport and green infrastructure.
- The municipality will seek green solutions and in so doing promote entrepreneurship. For example, via OPI projects.
- With its project approach, ensure that Energy2020 is embedded in each department.
- The mayor will sign the UN's Compact of Mayors.

Focus area 11: Communication and dissemination of Energy2020

Status

The Energy Secretariat communicates and disseminates Energy2020.
This happens via the website www.Energy2020.dk, the app Energy Tour, via leaflets, articles, adverts, mixed media, as well as via energy days, conferences, speeches and project partnerships etc.
Since the beginning of 2008, many energy days and meetings with citizens have been organised. Most recently, three workshops were organised in 2015 for local citizens, businesses, experts and energy stakeholders. Here the Energy Council asked the participants for inputs and these recommendations are the basis for the current Energy2020-Strategy.

Perspectives

Energy2020 must involve all citizens in Ringkøbing-Skjern Municipality. The driving force in Energy2020 are the big and small projects that citizens, businesses and associations initiate. When citizens save energy, insulate their houses, introduce new technology or drive more economically, this contributes to the objectives.
A sound framework and well thought out processes can yield solid results if carried out together with local stakeholders and with projects close to the citizens.
The Energy2020 cooperation with many small and big energy projects is also gaining interest from both Danish and foreign guests. These visits have the potential to create local trade and export opportunities.

Energy2020 objectives

1. We want to inspire citizens and businesses to increase focus on energy savings and energy efficiency as well as to apply and utilise renewable energy.
2. We will put Ringkøbing-Skjern Municipality on the map both nationally and internationally via Energy2020.
3. We will display the area's many competences and businesses within renewable energy.

Actions

- The Energy Secretariat will coordinate, communicate and disseminate Energy2020.
- We will inspire and guide citizens and businesses.
- We will promote renewable energy solutions to the benefit of citizens and businesses.
- We will create stakeholder networks, enter into strategic cooperation with relevant partners, for example with citizens, businesses and organisations, schools and culture, local stakeholders and others, and let good ideas spread like ripples in the water.
- We will obtain expert knowledge and use it locally.
- We make use of apps, websites, new IT, simulation tools, robots, drones etc.
- We will contribute to and launch new projects as far as the resources permit.
- We will prepare the Strategic Energy Plan and follow-up on the Energy Accounts.
- We will work on creating more local ambassadors for sustainability. We will work with design for example within experience design, processes, organisations, cooperation, co-creation, products etc.
- Representatives from the Energy Council and the Energy Secretariat will participate in select conferences and events domestic and abroad for inspiration and to attract new knowledge for the Energy Council, for example, meetings like COP21 etc.

Focus Area 12: Green entrepreneurship and business growth

Status

The City Council's target for Energy2020 has set the green agenda and created a platform where citizens and the businesses can also join. It has contributed to retaining many jobs within the wind turbine industry and related businesses. Many brand new jobs have, however, also been created, for example within production of homes-scale wind turbines.
Within biogas, several businesses are cooperating and new businesses have started that are now selling complete biogas solutions for domestic markets and for export.
Via projects on energy checks and energy renovations, employment has been generated. House owners who have invested in energy renovations have achieved improved comfort and cheaper energy bills.
There are admirable examples of how surplus heat from cooling and industry can be used for district heating. Also within sharing economy, a brand new business has established itself and created a business for the benefit of economy, mobility and environment. See more stories on the app "*Energy Tour*".

Perspectives

Energy2020 must sustain the green agenda and contribute to strengthen the local businesses that can develop and test new technologies and in so doing create green growth in Ringkøbing-Skjern Municipality. A green growth laboratory is only regarding wind turbines and biogas but should also be considered in a broader sense where new forms of cooperation and technologies are planned, tested and launched.
There is a great potential, which can be realised as more and more citizens and businesses cooperate on finding innovative solutions to known and new challenges.
For example, there may be a perspective in bio economy with an emphasis on utilising businesses' residual products. Projects and solutions within Smart Energy also have great perspectives.

Energy2020 objectives

1. To create green entrepreneurship, growth, added value and employment.

Actions

- Embedded in the Energy Council and in cooperation with the Business Center, an energy group will be sought established, focusing on green growth, promoting entrepreneurship and employment.
- The group is tasked, in close cooperation with relevant partners, to support, develop and implement projects that support the overall objectives.
  For example, this can happen via workshops focusing on new ideas within smart consumption, Smart Net and IT, transport, shared economy, circular economy and new use of biomass as well as by connecting small and big investors with local entrepreneurs.

Focus Area 13: Energy tourism

Status

The municipality and private businesses have collectively received visits from many guests and business delegations, domestic and foreign, where the emphasis has been on Energy2020, energy plants, green products, a broad range of renewable energy solutions, organisation and political support. They all fall under the term Energy Tourism.

Perspectives

Energy tourists consist of private citizens, businesspeople or people from public organisations both domestic and foreign. Their visits are interesting for our local area, as we via energy tourism, can display the businesses' green competences and products and in doing so create growth. The visitors also contribute to local turnover by means of accommodation and catering. Energy tourists often come here to find inspiration, however, their visits also contribute to us in terms of the knowledge and inputs they bring with them. In addition, personal relations are established where credibility and trust can form the foundation for mutual trade and export.
Ringkøbing-Skjern can, via "proven performance" with many worthy cases for inspiration, show how far it is possible to go within a few years. Energy2020 can inspire domestic and foreign visitors and actively demonstrate Know-how and Show-how.
See the app *"Energy Tour".*

Energy2020 objectives

1. Energy tourism should be promoted for the benefit of small and big business' turnover and export.
2. Visits to energy businesses, possibly in combination with cultural experiences, are made accessible and attractive.
3. Energy2020 shall put Ringkøbing-Skjern Municipality on the map both domestically and internationally.

Actions

- We will enter into strategic cooperation with relevant parties to secure the overall objectives, for example in cooperation with other municipalities, the Foreign Ministry, Tourism, State of Green, domestic and foreign private businesses and knowledge institutions, local ambassadors, KRAFT, Innovest, the Cultural, Nature and Leisure parties, as well as other local stakeholders etc.
- Via apps, websites and other tools to display the many local energy competences and via theme-package-tours attract business visits etc.
- For example, organise and educate energy-guides to coordinate business visits.
- For example, establish contact with potential foreign partners, embassies and universities with the objective to generate energy visits and possibly Summer Camps with an emphasis on energy and sustainability.
- For example, show Know-how and Show-how on efficient energy solutions.

- Look to establish a working group and appoint a group coordinator to secure the objectives in Focus Area 13, Energy Tourism.

Final Remarks

A strategic energy plan contains many elements and in practice, it may be difficult to start all elements of the plan immediately. The Energy Council and the Energy Secretariat will therefore prioritise initiations of the individual actions, taking time and resources into consideration. The first focus of the Energy Council is to prioritise and start-up the many working groups with group coordinators. The Energy Council and the Energy Secretariat support the groups, which consist of both professional and volunteer stakeholders; however, administrative and political backing is also required. Moreover, it is expected that the Energy2020-Strategy's many initiatives will result in applications for funds from the Economic and Business Committee.

There is a follow-up on the groups' work through rolling presentations for the Energy Council and for the Economic and Business Committee once a year.

Energy2020 is more than half way towards the objective of making Ringkøbing-Skjern Municipality 100% self-sufficient in renewable energy in 2020. The strategy puts forward actions that are expected to take us to the objective. Our local actions are, however, often heavily dependent on national framework conditions, which can either, boost or slow down the results. Lack of impact in one focus area will therefore require a higher ambition level in other focus areas.

The Energy2020-Strategy is expected to show great resilience due to local instruments, local resources, local citizens, energy stakeholders and businesses. For this reason, it is assessed there is a realistic basis for reaching the objectives in Energy2020, which is to ensure net energy savings while producing as much renewable energy as there is energy consumed in the entire geographical municipality.

It is of great benefit for the immediate environment and the global climate when an area is able to produce its own renewable energy. It provides for a clean environment and also creates large local cash flows for the benefit of citizens and businesses.

Full realisation of Ringkøbing-Skjern Municipality's Energy2020-Strategy is expected to deliver an annual economic reward for the municipality as a whole of approximately DKK 220 million as well as a better environment and climate.

57.000 participants

Visions and plans do not make themselves. Energy2020 involves all citizens in Ringkøbing-Skjern Municipality. The driving forces are the big and small projects that citizens, businesses and associations put into action. When you save on energy, insulate your house, introduce new technology or drive more economically then you contribute towards reaching the objectives. Energy 2020 is a help for everyone who wants to use less polluting energy.

See also www.Energy2020.dk

For more information contact:
The Energy Council: Peder Sørensen, City Council Member and Chairman of the Energy Council peder.sørensen@rksk.dk
The Energy Secretariat: Henning Donslund, Tel. 9974 1651, henning.donslund@rksk.dk